

I/We Claim

1. A composite structure comprising:
a plurality of layers of laminate; and
a layer of adhesive located between each adjacent layer of the plurality of layers of laminate;
wherein the adhesive is a composite adhesive which has a plurality of spheres intermixed within the composite adhesive to facilitate improving bonding between adjacent layers of the laminate.
2. The composite structure according to claim 1, wherein the spheres are hollow spheres which are coated with a coupling agent.
3. The composite structure according to claim 2, wherein the coupling agent is a silane coupling agent.
4. The composite structure according to claim 1, wherein the composite structure is a laminated shell which is used for manufacture of one of a percussion instrument and a piece of furniture.
5. The composite structure according to claim 1, wherein the composite structure is a laminated sheet of material which is used for manufacture of at least one component of a string instrument.
6. The composite structure according to claim 1, wherein the composite adhesive comprises a mixture of between 1% to 40% of the spheres and 60% to 99% of the adhesive
7. The composite structure according to claim 1, wherein a thickness of the composite adhesive, applied between adjacent layers of the laminate, is between 1 and 20 mils thick.
8. The composite structure according to claim 1, wherein each layer of the plurality of layers of laminate has a thickness of between 0.010 and 0.250 of an inch.
9. The composite structure according to claim 1, wherein the composite structure has between 2 and 20 layers of laminate.

10. The composite structure according to claim 1, wherein at least one the plurality of layers of laminate is a layer of one of a maple laminate, a birch laminate, a poplar laminate, a gum laminate, a bass laminate and a mahogany laminate.

11. A composite structure comprising:

a plurality of layers of laminate with at least one layer being a wood laminate; and

a layer of adhesive located between each adjacent layer of the plurality of layers of laminate;

wherein the adhesive is a composite adhesive which has a plurality of hollow spheres uniformly intermixed within the composite adhesive to facilitate improving bonding between adjacent layers of the wood laminate.

12. The composite structure according to claim 11, wherein the hollow spheres are coated with a silane coupling agent.

13. The composite structure according to claim 12, wherein the silane coupling agent comprises from about 0.01% to 20% of a coated hollow sphere formulation while the hollow spheres comprise from about 80% to 99.99% of the coated hollow sphere formulation.

14. The composite structure according to claim 11, wherein the composite structure is a laminated shell which is used for manufacture of one of a percussion instrument and a piece of furniture.

15. The composite structure according to claim 11, wherein the composite structure is a laminated sheet of material which is used for manufacture of at least one component of a string instrument.

16. The composite structure according to claim 11, wherein the composite adhesive comprises a mixture of between 1% to 40% of the hollow spheres and 60% to and 99% of the adhesive

17. The composite structure according to claim 11, wherein a thickness of the composite adhesive, applied between adjacent layers of the laminate, is between 1 and 20 mils thick.

18. The composite structure according to claim 11, wherein each layer of the plurality of layers of laminate has a thickness of between 0.010 and 0.250 of an inch.

19. The composite structure according to claim 11, wherein the composite structure has between 2 and 20 layers of laminate and at least one the plurality of layers of laminate is a layer of one of a maple laminate, a birch laminate, a poplar laminate, a gum laminate, a bass laminate and a mahogany laminate.

20. A percussion instrument manufactured from a laminated shell in which the laminated shell comprises:

- a plurality of layers of wood laminate; and

- a layer of adhesive located between each adjacent layer of the plurality of layers of wood laminate;

- wherein the adhesive is a composite adhesive which has a plurality of spheres intermixed within the composite adhesive to facilitate improving bonding between adjacent layers of the wood laminate; and

- a drum head being attached to at least one end of the laminated shell to form the percussion instrument.